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Exploring our Environment

Environment
Environnement
Ontario

Exploring Our Environment

EXPLORING
OUR
ENVIRONMENT

To our Readers:

You will note that some of the text is written as a guide to group leaders; for example, the section "Exploring our Natural Environment" on page 7.

Other sections are written in such a way that copies can be made for individual group members to keep and work on activities on their own; for example, the section "Our Urban Community and Things You Can Do" on page 50.

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Introduction

You and your group are about to embark on a wondrous, exciting adventure as you explore both our urban and our natural environments. Use the activities in this book as a guide but don't hesitate to come up with your own activities or use suggestions from your group members. And our province has such varied environments, we couldn't possibly cover all the possibilities!

Before you begin the group discussions and activities let's look at some of the facts and fabrications about people with physical disabilities.

Background

Before the 1980s people with physical disablities were faced with many barriers in their communities. For example, people who use wheelchairs often could not get into public buildings if ramps were not available. But two historic events have helped Canadians become more aware of the rights and needs of people with disabilities. First, the United Nations declared the 1980s as the Decade of Disabled Persons, and they declared 1981 as the International Year of Disabled Persons. And here at home the passage of the *Canadian Charter of Rights and Freedoms* in 1982 guaranteed people with disabilities the right to participate fully in all educational and recreational activities.

You might have someone in your group who uses a wheelchair or who is visually impaired. Just as each person is an individual, each disability is unique. The following section offers tips on dealing with situations that might involve people with visual, hearing or mobility disabilities.

Hints on helping people with mobility disabilities

- If you are planning an outdoor activity remember that rough terrain may aggravate painful conditions, especially for some people who use wheelchairs. Rough terrain could also cause people who use canes, braces or artificial limbs to trip. But the answer isn't to stay inside! Many fire roads and trails that are hard-packed are usable. And don't forget parks that have paved walking trails.

- If you're on an outing, try to make sure your group starts and stops together, so everyone has a chance to rest and to talk to the other group members.

- If you're on an outing, plan lots of rest stops that include restrooms. If possible, find something fun to do when you have a rest stop. One fun activity is feeding chickadees. Take along some sunflower seeds and these brave little birds may eat out of your hands.

- You can offer to help the person move if you want, but don't insist. Sometimes it really is easier for the person to act alone.

- Don't lean or automatically hold onto a person's wheelchair. It's part of the person's 'space' and should be respected.

- As with anyone, talk directly to the person with a disability, not to a third party.

- Don't be afraid to use words like 'walking' or 'running' with people who use wheelchairs. They use them too!

- Don't remove someone's crutches or cane if they sit down. The person will be more independent and may feel more secure if they don't have to ask for them back before moving.

- If you are pushing someone in a wheelchair, ask them how they would like to go down a hill or over a curb. Some people like to face forward, while other people like to face backward.

- Don't be afraid of the mobility equipment. Even though some of it may look as if it came from NASA (and perhaps some of it did), it is simply to help the mobility, safety and the independence of the person using it.

Hints on helping people with visual impairments

- Speak directly to the person; and if trying to get their attention lightly tap them on the arm or shoulder.
- Speak to them in your normal voice -- there is no need to shout.
- If you're not sure how much they can see, ask them.
- Remember that we have five senses -- smell, hearing, touch, taste and sight -- and activities should make use of all the senses. Touch is one of the most important senses used by people who have visual impairments.
- Don't be afraid or embarrassed to use words such as 'see' or 'look'. They use them too!
- Remember that guide dogs are allowed anywhere the public is allowed. And don't pet, give treats, or talk to the dog without asking the owner.
- Tell the person if you are leaving them. Before you do, make sure that they are familiar with the surroundings.
- Be clear and specific when giving directions. For example, if there are steps tell the person how many steps AND if they go up or down.
- If you are guiding a visually impaired person, never push them forward. Let them take your arm and then lead them. Remember to warn them of any obstacles -- light posts, fire hydrants, flower boxes, etc.

- Never take their cane from them. If a cane is in the way of other people, ask the visually impaired person to move it.

- If you are helping someone to sit down, place their hand on the back of the chair, then let them feel their way into the seat.

- Tell them if you have any information in braille, large print or cassette form.

- Try to make sure the rooms you use for activities are brightly lit. Try to use brightly coloured activity material -- for example, bright and bold construction paper or balloons.

Hints on helping people with hearing impairments

- If the person lip reads, speak directly to them and don't distort your mouth to emphasize words.

- Speak slowly and clearly. Don't mumble.

- Don't speak with your hand in front of your face, or with food in your mouth.

- Stand against plain, uncomplicated backgrounds when possible, and avoid standing in front of windows when you are speaking to them (the back lighting makes it hard to see your mouth).

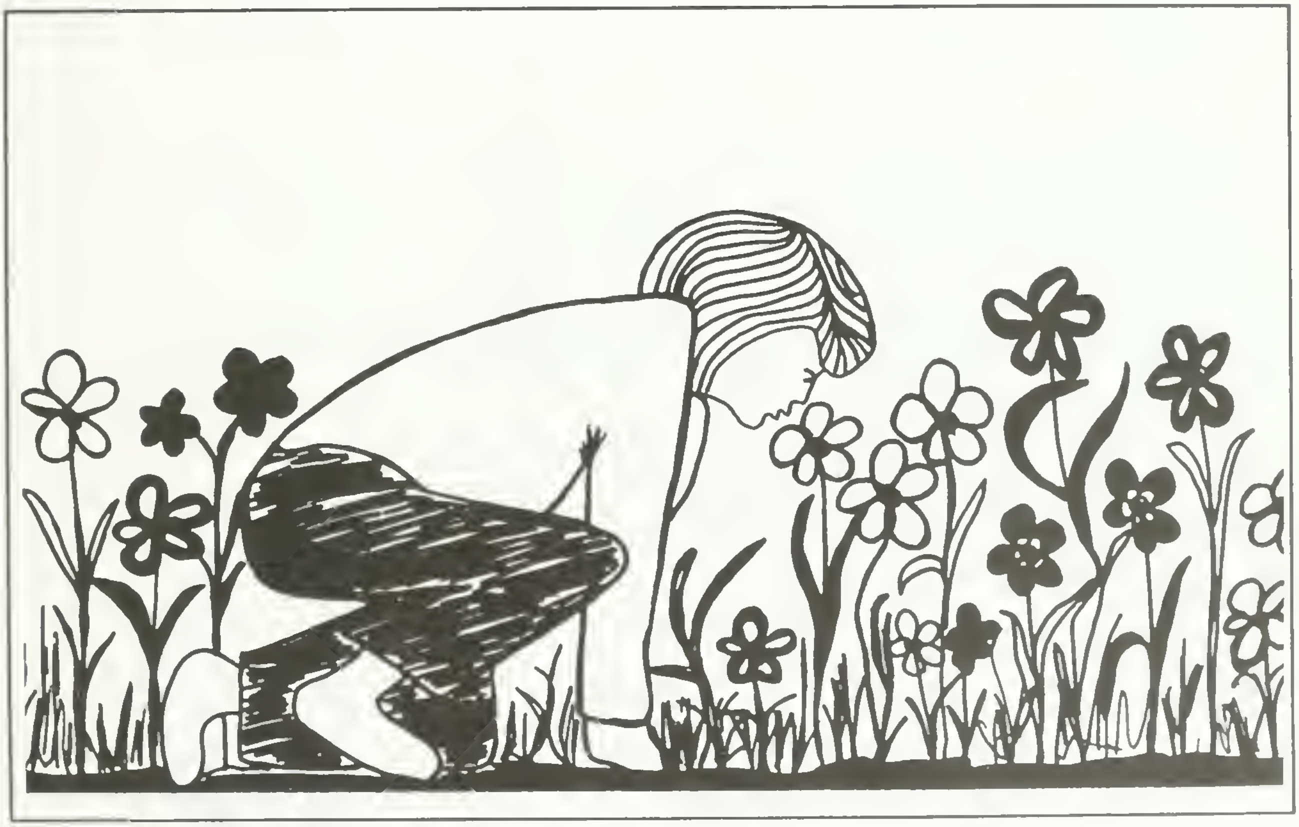
- If you aren't understood, repeat the sentence. If you're still not understood, use different words.

- If necessary, use a pen and paper. Keep the message simple.

Whether or not we have a disability, we are all equal members of our communities. That means we have a responsibility to learn as much as we can about our environment and the choices we have to help our environment. So let's get started.

Exploring Our Natural Environment

Our natural environment is as much our home as our mailing address. The earth we walk on, the air we breathe and the water we drink are the building blocks of our natural environment. While people have carved towns and cities out of the natural environment, it is still home to many animals, birds and insects. This section will help you lead the exploration of our natural environment.



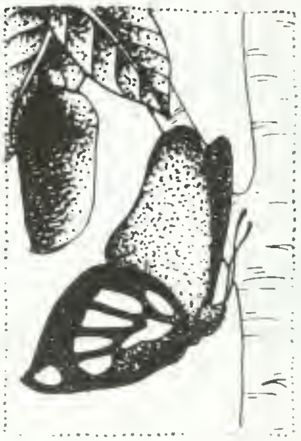
Introduction

A walk in the woods is a good place to start our exploration. Whatever the season, you can plan an outing but keep in mind winter weather could be difficult for people who use wheelchairs, crutches or other mobility assistance devices. Spring is a delightful time for a hike as the birds are back, young animals are out and about, the leaves and flowers are in bud, and the mosquitoes aren't out! If you plan a hike remember to check the route for rough terrain, obstacles and steep hills, if you have a person who is mobility or visually impaired. You could plan a hike at a conservation authority area -- there are many around the province -- or the outing could simply be a visit to the backyard!

As with any of the activities, you will be the best judge of the interest, ability, experience and attention span of your group.

Things to think and talk about as you tour the nature neighbourhood.

- Name several sounds, for example bird calls, running water or the wind rustling the leaves.
- Name several animals or birds seen.
- Pick out leaves with differing shades of green, different shapes, different textures and if possible different scents.



- Talk about hibernating animals and migrating birds.

- Just as we need food, water and shelter, the plants, animals and birds have these basic needs. Pick an animal, bird or plant and identify its basic needs.

- Natural communities, like towns or cities, have certain basic systems that help the community to function. Some examples you might find on your walk are animal trail systems, streams, or light and dark areas. And each plant and animal has their own niche in the community.

You may use the following questionnaire to help younger children understand how nature is an intricate and stable community. Have them pick and hold something, for example a snail shell, or look at something and then ask them these questions.

Survey for Natural Community Profile

1. Describe, in a few words, what you are looking at or holding.

2. Do you think it is old or new?

3. Does anything live on it?

4. Can it move by itself?

5. Where does it get its food?

6. How does it keep safe?

7. Why is it found here?

8. Can you find more of these things nearby?

9. Do you think it is in good shape?

10. Could you help it have a better life or would you hurt it?

11. What is it made of?

12. What kind of home does it live in?

13. What kind of path leads to its home?

14. Does nature keep it safe?

15. Do people keep it safe?

16. Does it make any kind of litter?

17. How many plants or animals live on or near it?

Plants

Plants are both beautiful and beneficial. They range in size from tiny lichens to giant redwood trees. Plants generate oxygen for our air allowing us -- and the animals -- to breathe. They do this by taking the carbon dioxide from the air and releasing oxygen and water into the air. Let's start by looking at trees.

Using your senses of sight, touch and smell

Trees

We're lucky to live in an area of the world richly populated with trees. Not only do we use trees for things like fuel or furniture but trees feed us. Think of the apples and oranges and nuts we get from trees. Of course trees also feed and provide homes for animals, birds and insects too. And lumber from our trees provides shelter and furniture for people around the world.

But the great rain forests, in far warmer parts of the world, are very important to our lives here in Canada. These forests are so rich and dense they can take great quantities of carbon dioxide out of the air and replace it with life-giving oxygen and water. These massive forests also provide us with food -- like Brazil nuts. And the other plants that live in great forests provide the world with about half of our medicines. One example is the drugs used to help people with cancer -- more than 70 per cent come from plants in rain forests!

When you are out in the woods touch the trees. Are they smooth or rough? Is the bark peeling away?

Look at the leaves. Touch them and smell them. Are they smooth or prickly? What evidence of trees, besides the leaves, can you find on the ground? What types of trees do cones come from? Are they smooth or bumpy or sticky? Can you find different kinds of cones? Why do trees produce cones?

Flowering plants

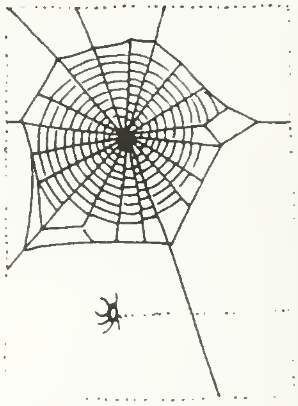
A wonderful feature of plants is that we can look at them, smell them and touch them -- and sometimes even eat them! The flowers of plants play an important part in the life cycle of a plant. Flowers are adapted to attract insects that aid in reproduction of the plant. The necessary parts for seed production are the pollen-producing stamens (male) and pollen-receiving pistils (female). And plants don't bloom all at once -- every season has different flowering plants.

Smell the air of the woods and field. Describe the odours. Describe the colours and abundance of leaves. Look at and touch branches and stems and leaves of different plants.

Smell the leaves and flowers of the same tree or plant. Do they have the same odour? Which do you think has the more pleasant smell: leaves or flowers?

Look for plants that have buds but no flowers. Look for plants that have buds partially opened and fully opened. Look for a leaf bud and a flower bud on a tree. Try to find the tiny leaves in the leaf bud. Describe them. Describe the differences between the two.

If you are in a field, look for insects close to or in flowers. What insects to you see? Are they flying or crawling? Do they go to flowers of the same variety or of different varieties? Smell the field flowers. Are the odours pleasing? Do you think the smell attracts the insects? What part do these insects play in the story of seeds?



You may want to use the following data sheet to help children become familiar with plants and flowers.

Flower Data Sheet

Name of Flower:

Draw the flower:

Colour:

Smell:

Size:

Number of petals:

Shape:

Location:

Rub a leaf here to catch its scent and colour:

Rub the stem here to catch its scent and colour:

Besides flowering plants, there are ferns, mosses, fungi, lichen and algae plants living in the woods and fields.

Ferns

How can you tell one fern from another? Fern leaves are called fronds. Compare the fronds. Are they all the same shade of green? Can you find fronds that seem to be made up of smaller fronds? Look at the back of the fronds. Feel them. Do ferns have seeds?

Mosses

How can you tell one moss from another? How can you recognize moss? How many kinds of moss can you find? Describe the differences. Are the same kinds of moss growing in the field as in the woods? How does moss feel? How tall does moss grow? Measure the height of the tallest moss you can find. What is the shortest? How does moss differ from ferns? How does moss differ from flowering plants?

Algae

Is that alga or moss on the trunks of the trees? How do you know? Is it true that it grows only on the north side of trees? Why do you suppose people say you can tell which way is north by the 'moss of the trees' if it isn't true? Why might more algae be found on the north side of trees than on the other sides? How does alga differ from moss? How does alga feel? Does it smell? What colour are algae? Compare them with lichens and mosses.

Lichens

How do you recognize a lichen? How do lichens feel? Do lichens smell? What colour or colours would you use to describe lichens? How many different lichens can you find? Where do you usually find them? What are they doing to it? How does the ground feel where the lichens are growing? Compare this with the feel of the ground where you find mosses or ferns.

Fungi

How many kinds of fungi can you find? Feel them. How would you describe them? What colours are the fungi? Feel the wood under the fungi. How would you describe how the wood feels, how it looks, and how it sounds when you tap on it. Why does it have these characteristics?

Animals

We've had a look at plants so let's turn our attention to other living beings in our natural environment. The natural environment is a rich and diverse community. It's home to animals, birds, reptiles, amphibians and insects.

Using your senses of hearing, sight, sound, and touch

By listening to the sounds, looking for partially consumed food, or finding homes or droppings, you will have an idea of what animals inhabit that community. Another way to tell who is living in the community is by following their tracks. The tracks offer many clues to the animal's identity, the direction it was going and its size. They may also show how the animal gets its food, what it eats, where it lives, how far it travels, what its enemies are, and what kind of environment it needs for protection. Each animal, as it moves, leaves a characteristic set or pattern of prints. And the size, depth, and arrangement of these prints are directly related to how fast the animal was moving. The following activity allows the members of your group to make plaster cast imprints of the animals tracks they find. Try to find as many different animal tracks as you can. You may have to help members of your group with the plaster cast, but the finished cast will be delightful to hold and touch.

Materials you will need
cardboard
plaster of paris
cups for mixing
water
paper clips

What to do

1. After finding a track, carefully brush away twigs, small stones and excess dirt found in its immediate vicinity.

2. Use cardboard strip 3.8 cm wide to surround track. Fasten strip with paper clip to form a dam. Push down lightly into dirt.

3. Mix plaster of paris to consistency of thick cream (remember to put plaster INTO water, NOT water into plaster). Pour slowly over track.

4. After plaster hardens, about 30 minutes, lift it out and peel the cardboard away. Wash dirt away after 24 hours. If you want to, you can then paint the casts.

Okay, you've got the plaster hardening for 30 minutes. What are you going to do now? You and your group could continue your exploration of that area. This gives your group an idea of what the community is like for the animals.

What is the season? What is the time of day? How does the air feel? What is the condition of the sky? Is it windy? Look at the woods in the distance -- what is the colour? Do the trees move? Do the trees appear to be coniferous or deciduous? What kinds of sounds do you hear? Are the sounds natural or man-made? Is there repetition in the sounds you hear -- for example, is one bird repeatedly calling? Describe the most striking sound you hear.

Look at the trees. Can you find any trees that are scarred? Is the scar fresh? What do you think caused the scar? Is the tree alive? How do you know? Look for insects on the trees. Look for bird traces on the ground. What kinds of birds do you think live in the tree?

Lift a rock -- pull it back and look over the far edge. Describe the earth under the rock. What is its colour? What is its texture? Describe any living organisms you see under the rock. Replace the rock in the same spot. Why?

Listen for sudden sounds at ground level. Look for signs of partially eaten plants, fungi, nuts, etc.

Look at leaves on growing plants. Do you see any indications that insects have been eating leaves? What would happen to a plant if the insects ate all the leaves? What would happen if the leaves were no longer available to the insects? When do people try to control this? Can you find a food cache? Has part of it been eaten? What animal could have collected the supply? Why?

Look for other animal tracks. Where are they going? Where did they come from? Who made them?

Look for animal homes. What are they made of? Where did the material come from? Can you find any homes that animals live in, but didn't build? How are the homes different? What homes do you see high above your head? What animal homes can be found on or near the ground?

Did you find any bones, fur or feathers? Can you identify the animal? Is this the remains of a bird, mammal, reptile, or fish? How do you know?

Reptiles and Amphibians

Reptiles and amphibians play a vital role in the ecological balance of the natural community. Some examples of reptiles are snakes, turtles and lizards. Some examples of amphibians are toads, frogs and salamanders.

Using your senses of sight, touch, smell and hearing

Where to look for reptiles
snakes -- under rocks, rotten logs or in open fields
turtles -- deepest woods, ponds, lakes or streams
lizards -- fence posts, on rocks or in open fields

Where to look for amphibians
toads -- upland woods or moist evergreen forests
frogs -- in and around ponds, streams or marshes
salamanders -- under moist forest rocks, logs, or along a pond or stream

Sounds of a pond
A good activity is to take your group to a pond in the late afternoon. Try and keep the group quiet. If you can and if you're lucky, pretty soon the sound of the frogs will begin. How many different sounds can the group identify? Why are they calling?

You could catch a frog and have a closer look at it. Be sure to handle the frog carefully and place it in a big jar with about an inch of water (remember DON'T put the lid on the jar -- perhaps cover with netting temporarily).

1. Place the frog in the jar of water where it can be seen from all sides.

2. Look for the following characteristics:

colour:	dark on top, light on bottom -- this is for protection
shape:	streamlined -- this is for speed
skin:	smooth, slippery -- this helps it escape from enemies (like humans!)
back legs:	strong muscles -- this is for jumping and swimming
	webbed feet -- this is for swimming
eyes:	stick out from the top of the head -- this lets the frog see above water while its body is under water
ears:	side of head -- these are flat, round membranes
nostrils:	tip of head -- these are covered with small flaps that close nostrils when under water
throat:	rapid action while breathing -- this stops when under water and instead breathes through skin under water
mouth:	wide -- it extends from ear to ear

3. Place an insect or a worm in the jar with the frog. Notice how the frog catches the insect. The tongue is fastened at the front of the lower jaw instead of the back of the mouth. The tongue is forked and sticky. When catching an insect the tongue flips out very fast, snatches the insect and flips it back into its mouth. You will have to watch closely to see it happen!

4. Place the frog in an aquarium and watch it swim. Place the frog on the ground and measure how far it can jump. How many times its own length can it jump? How many times your own length can you jump?

5. Finally, carefully return the frog to where you found it.

Birds

Birds are not only colourful and chatty neighbours, they fill an important niche in our natural environment. They vary greatly in colour -- from subtle browns to brilliant blues; they vary greatly in size -- from an imposing hawk to a tiny hummingbird; and they vary greatly in voice and actions. Their feet and legs are adapted for running, wading, perching, grasping and hopping. Their beaks are adapted for various types of food. Most birds have four toes adapted for their habitat. Songbirds have three front and one rear for perching. Woodpeckers have two front and two rear feet for climbing and clinging, and ducks have webbed feet for swimming. In most species of birds the male is more brightly coloured than the female. Birds' diets consist of seeds, insects and rodents.

Using your senses of sight, hearing, and touch

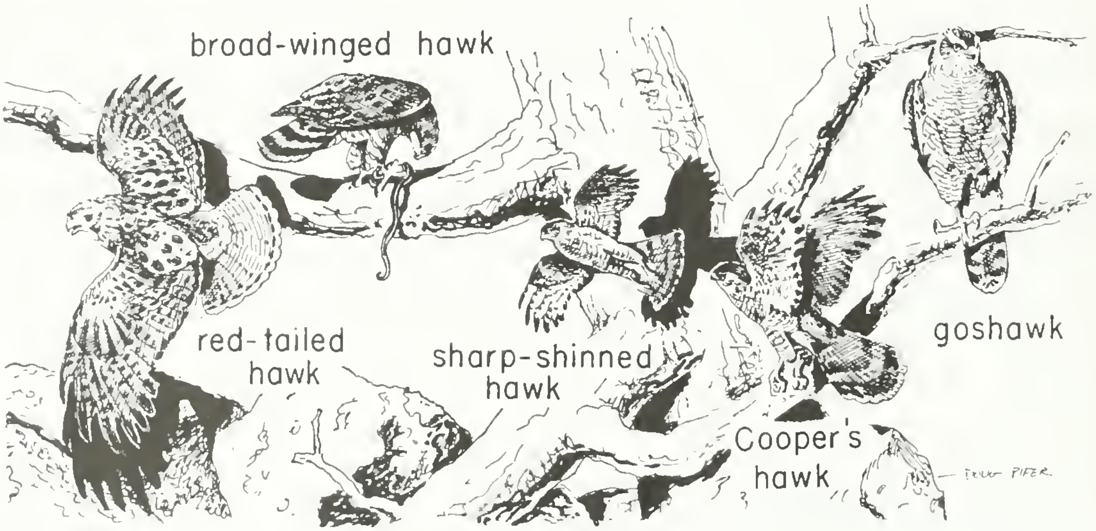
Plan a journey to the edge of a forest or woods -- or any area of low trees and bushy spots where you'd expect birds to find food and shelter. Again, a trip to a local conservation authority or community park might be a good idea if you have group members who have mobility impairments. Available water is also attractive to birds. Along the way you might want to talk about the habitats of various birds. You would find a field guide to birds extremely helpful. Perhaps you could borrow one from the library.

Where would you expect to find birds? What signs would you expect to find indicating there are birds in the area? Would you expect to find ducks in this area? Why? Would you expect to find hawks? Owls? Name some of the birds you would expect to find. Describe the places where you think these birds might live. What do birds need for a comfortable life? Does this area meet these needs? What are some of the reasons you might not find the birds you expect to find?

Don't try to find as many birds as fast as you can, but rather find a few which may be easily observed and watch them closely. Sometimes during fall migration, small birds exhibit marked curiosity and may come up really close to the observers, if they are patient and do not make sudden moves or loud noises. Chickadees, with their characteristic chic-a-dee-dee-dee chirp, are famous for their curiosity.

Look carefully and quietly at the bird. What colour is it? Is it all the same colour? Streaky? Blotchy? What size is it? Crows are about 50 cm, robins about 25 cm and sparrows about 15 cm.

How far away from you is it? This might be checked roughly after the bird has flown.



Can you see any obvious distinguishing features? Look especially for colour patches, wing bars, and eye lines.

Look now at the bird's bill. What is the general shape of the bill? How is the bird using his bill? What clues do you find in the shape of the bird's bill, that might tell you what it eats? What other uses has the bill? How does a bird chew its food?

Can you see the bird's feet? How many toes does it have and how are they arranged? How does the bird use its feet? How do they compare with your feet or hands?

Can you see the bird's wings? How are they arranged on the bird's body? How do they compare with your arms or feet?

Look at the bird's movements and describe them. Do you notice any pattern to the bird's movements? Does it do anything that appears unusual to you (cling to the bark of the tree, hang upside down, fly out and return to the same perch, etc.)? How does it fly? Straight? Up and down? Gliding? Soaring? Does it walk? Hop? Run? What noises does it make? Do birds have different calls? Why? What do you think they're trying to tell each other?

Winter is the best time to feed the birds as food is plentiful in the other seasons. If you have the chance to watch birds at a feeder, here are a few things to think about.

What do the birds eat? Do they all like the same kind of seeds? Do all birds eat seeds? Does the bird pick up the food and fly away? Does it eat the food at the feeder? How do they open seeds? Does any bird chase the others away?

Feeding the flocks

- Bluejays, chickadees, and nuthatches are brave birds. You and your group could scatter wild birdseed, sunflower seeds, or bread crumbs on an open patch of ground and watch them feed.
- If you and your group meet somewhere very regularly, like a school or church, you could build feeders from old milk cartons. Remember that once you start feeding the birds in the winter they will depend on you for food. If you plan to do this, make sure you have permission from the people owning the building.

Can you find any feathers? Do birds normally lose their feathers? What colour is the feather? If there is more than one colour, what type of pattern do the colours have? Is the feather in good shape or does it look worn? Which part is worn the most? How is the feather shaped? Can you tell from the shape what part of the bird's body it came from? Can you guess what type of bird it came from? Could it be from more than one type of bird?

Insects

You can continue your journey in the woods or conservation authority or park by having a look at insects.

Insects play many important roles in the ecosystem. And they are well-adapted to live in all types of areas. They have adapted various body parts to best suit the habitat where they live. These adaptations include flight, movement, mouth parts, size and coloration. The sounds made by insects are produced in a variety of ways, creating a variety of sounds. Insects have six legs and three body divisions.

Using your senses of sight and hearing

Where can you find insects? Are there more flying or non-flying insects.? Are there insects in leaf litter? Are there any insects in the crevices of tree trunks? Did you find any cocoons? What do they look and feel like? What will come out of the cocoon later? Did you find any insects in the earth?

Listen for the sounds of insects. Can you follow one of the sounds and find the insect that is making the sound? What happens when you approach the insect? Why do you think this happens? Can you find out how the insect makes the sound you heard? Do you hear any insect sounds from farther away? Does the sound seem to be made by one insect or by a chorus of insects? What makes you think so? Can you use words to describe the sounds of insects? Which sounds are repetitive? Buzzing? Clicking? What do you hear when you hear insects flying around you? What part of a bee makes the buzz? Do all insects sound alike when they fly?

You can tell the temperature by the chirp of the snowy tree cricket. Count the number of times a cricket chirps in 15 seconds. Add 40. This will give the Fahrenheit temperature. To convert to Celsius, subtract 32, then multiply by 5 and divide by 9. All crickets chirp more rapidly when it is warmer.

How do the insects you found move? Do they fly? Crawl? Hop? How are their legs arranged? Does this seem to have any relationship with the way they move? How many legs does the insect have?

How many parts does the insect's body seem to have? Where are the legs attached? Where are the wings attached?

How many eyes does the insect appear to have?

Look at the insect's mouth. Does it have a mouth adapted for chewing? For sucking? For something else? Does the insect have a tongue? Does the insect have antennae?

What colour is a grasshopper? A cricket? Can you find an insect with spots? Stripes? Can you find an insect that is one colour all over? How many different colour combinations can you find on insects? Does the colour of the insect seem to have any relationship to the place where you found it? Can you find an insect that can be camouflaged by colour?

Rope off an area about one metre square. Try counting the number of insects in that area. How many do you think there are in the entire field!?

How might insects be helpful to plants? To animals? If we removed all the plants from the area, what would happen to the insects? If we removed all the insects, what would happen to the area?

This brings us to another theme, the interdependence between the plants and the insects.

Plants and Insects

Insects use plants for food, shelter and laying eggs. And insects can change plants by enlarging or destroying parts of the plant.

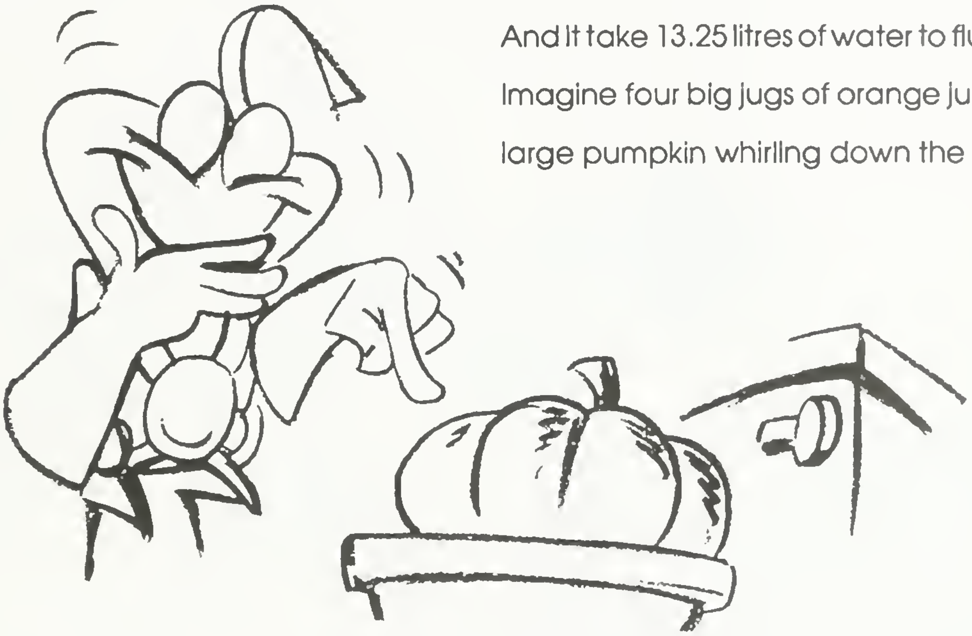
Using your senses of sight and touch

What evidence can you find of insects using parts of plants for food? For shelter? For laying eggs or bearing young? What parts of the plants have been used? Does the insect change the plant in any way? Does it enlarge a part of the leaf or stem? Does it destroy part of the plant? What part? Has this change affected this plant? Which do you think is more damaging: eating a part of a leaf or boring a hole in a fruit? From whose point of view? Has the insect used the plant as a foundation for making a cocoon or web? In doing this, has the insect changed the appearance of the plant? How?

One example of an insect changing a plant is the spittle bug. This bug produces foamy white bubbles along a stem. The bug sucks the juices from a plant stem and mixes them with air to make the bubbly mass. Then the young are hidden in the bubbles!

Our Water

We have water in our bones, muscles, eyes and blood. The human body is made up of 70 per cent water. We need about two litres of water a day to keep us healthy. But most of us don't drink that much from the tap. We get most of our water from food such as tomatoes, apples and potatoes.



And it take 13.25 litres of water to flush a toilet! Imagine four big jugs of orange juice, or one large pumpkin whirling down the toilet!

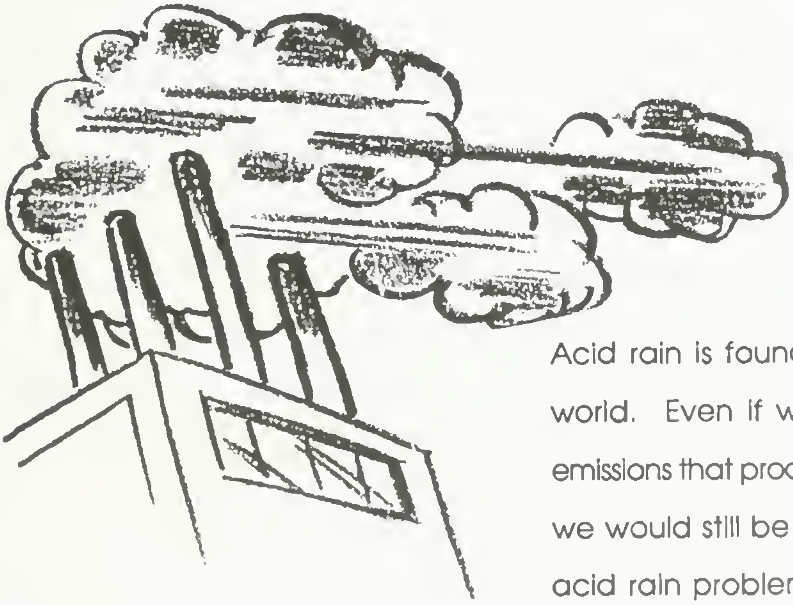
Most of the earth's water is salt water. Fresh water -- that's water from inland lakes and rivers -- makes up only 10 per cent of the world's water. That's like only one penny out of 10 making up all the fresh water. But of course, our drinking water must be fresh water. And today, most of us take it for granted that when we turn on the tap, we'll have fresh, cool and safe water. But it's only been in the last 60 or so years that water main systems have been an integral part of communities. As late as 1912, 1,378 people in Ottawa died of typhoid fever -- a disease caused by a bacteria called salmonella typhosa. The fever swept through that city -- with a population of about 87,000 -- twice between 1911 and 1913. Today there are more than 450 public supply water systems across the province.

Water in a lake or stream is filled with life. Insects, fish, plants and animals and even creatures you can't see, live in the water. And they are all important to a healthy lake.

But what are some of the problems with our water today?

Acid Rain

Acid rain is formed when two gases, sulphur dioxide and nitrogen oxide, mix with moisture and air. Sulphur dioxide is created by power plants and metal smelter factories. Nitrogen oxide comes from vehicle emissions and from home heating systems that use natural gas. As well as acid rain, we get acid snow and acid fog.



Acid rain is found in many parts of the world. Even if we stopped all the gas emissions that produce acid rain in Ontario, we would still be left with the half of our acid rain problem that comes from the United States. Smoke stacks and blowing winds don't care about borders.

Scientists measure acid rain on a scale called pH factor. This shows how much a substance is acidic or alkaline. The scale ranges from 0-14. The more acid there is, the lower the number. Vinegar and lemon juice, for example, rate 2 on the scale. Pure water is at 7 and milk is at 8.

Lake water is healthy when the pH level measures around 6.8. That means there's lots of oxygen in the water. Plants and animals need oxygen to grow and survive. Fish get their oxygen from the water but acid rain takes the oxygen out of a lake.

It takes about 20 years before a lake loses its battle against acid rain. When the pH level gets to be around 4, the plants and animals who made the lake their home are affected. Life changes. Plants like algae need very little oxygen to survive and start taking over the lake.

Fish eggs hatching in the spring not only get acid rain, but they also get a dose of acid water that comes from melting ice and snow. Eggs are so sensitive to acid, they won't hatch if exposed to it. Eventually, only old fish are left swimming around. After a while, they too die and there are no fish left in the lake.

If fresh water is very dirty, you'll only see creatures like aquatic worms and grey leeches. They need very little oxygen to survive. Insects, such as mayflies and blackflies, lay their eggs in clean water. Their young need much oxygen to grow.

Small amounts of algae are good for water. They provide food for fish and a place for smaller creatures to grow. Algae also help keep the lower water cool, which is important to certain kinds of fish.

But too much algae makes the water turn to a green-brown colour. After a storm, algae can turn into a black ooze and wash up on the shore. Algae can smell fishy, grassy or like rotten cabbage.

Foaming

The algae can also be part of the foaming you see on the surface of the water. This natural type of foaming has been happening for a long time. The algae, rooted aquatic plants and leaves that live in the water are organic matter. When this organic matter decomposes through natural bacterial action, another agent is released that loosens the tension of the surface water. When the wind blows, the waves on the lake stir up this agent resulting in the sudsy white foam. This type of foam is a harmless byproduct of our lakes. The suds are made up of 99 per cent air and water.

However, there is a type of foaming that is caused when too much phosphorus gets into the water. Phosphates are contained in most detergents. The phosphorus stimulates the growth of the algae so the lakes end up with more bubbles. And the increased algae can upset the ecological balance of the lake.

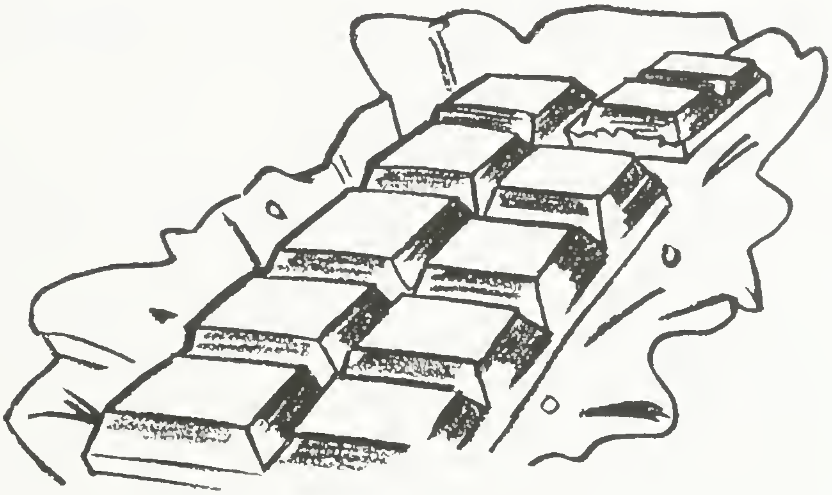
Our Air

Just because you can't see something doesn't mean it's not there! Think about air -- you usually can't see it, touch it, smell it or taste it, but you know it's here! If it wasn't we wouldn't be alive. You can live weeks without food, perhaps days without water, but you can live only a few minutes without air.

Despite not being able to see it, touch it, smell it, or taste it -- usually that is -- we do know quite a bit about air. First of all it is a gas -- quite an amazing gas as it contains the gases humans, animals and plants need to survive. Humans and animals need oxygen but that gas makes up only a small part of the air. Plants need carbon dioxide and the air contains a bit of that. But air is mostly made up of nitrogen. Think of air as a chocolate bar with 10 squares. Only two squares are oxygen, eight are nitrogen and the crumbs left in the wrapper make up all the other gases.

Air wraps itself like a blanket around the earth, acting as a natural heating and cooling system. Without this natural heating system, it would be like spending our nights in a freezer. Without this natural cooling system, it would be like spending our days in a broiling oven. And interestingly, this atmospheric blanket also protects us from being bombarded by meteor showers. As the meteor falls, the air rubs against it creating such heat that by the time it reaches our air, it's burned into small pieces.

Let's look at how weather is related to air.



Weather and Air

Weather is made up of moisture, wind and air pressure. Weather also includes temperature.

- The temperature of air influences weather. Warm air expands, cool air contracts.
- Precipitation is water that falls to the earth in the form of rain, snow, sleet, hail or dew.
- Wind is moving air and differences in air pressure cause the air to move.

Warm air can hold more water than cold air. Rain occurs when tiny drops of water in warm air gather until they become too heavy and fall to the ground.

When we're in cold air our hair muscles contract. Each hair muscle is pulled up giving our skin that 'goose-bump' look. This creates tiny pockets of air, that help warm us up. Birds use the same kind of muscles to fluff up their feathers in cold weather. However, their muscles work a lot better than ours do.

Thunder is actually caused by lightning. A spark of lightning streaks out in the sky and heats the air around it. The air is so hot it expands quickly. When the hot air particles fly out, they bang into surrounding cool air and make huge sound waves -- what we call thunder.

Using your senses of sight, touch and smell

Simplified Weather Study

These simple experiments will help illustrate the effects of heat, moisture, wind and air pressure on weather.

Measuring air pressure · *The Collapsing Plastic Container*

Materials you will need

water
ice cubes
(4 litre) cooking pot
measuring cup
plastic container with a screw cap lid
hot plate

What to do

1. Put 225 ml of water in the cooking pot.

2. Ask an adult to place the pot on the hot plate. Allow water to boil.

3. Fill the plastic container almost to the top with water.

4. Place the plastic container, uncapped, in the cooking pot.

5. When steam rises, cap the plastic container and remove the plastic container from the cooking pot. Make sure you use oven mitts to move the can.

6. Turn off the hot plate.

7. Rub ice cubes along the sides of the plastic container.

What happens

The plastic container collapses. Why? Air pressure around it pushes on its sides because the air pressure outside is greater than inside. Steam pushes air out of the plastic container; ice changed the steam back to water, thus there was neither air nor steam inside the plastic container.

Measuring precipitation -- *Making Snow*

Materials you will need

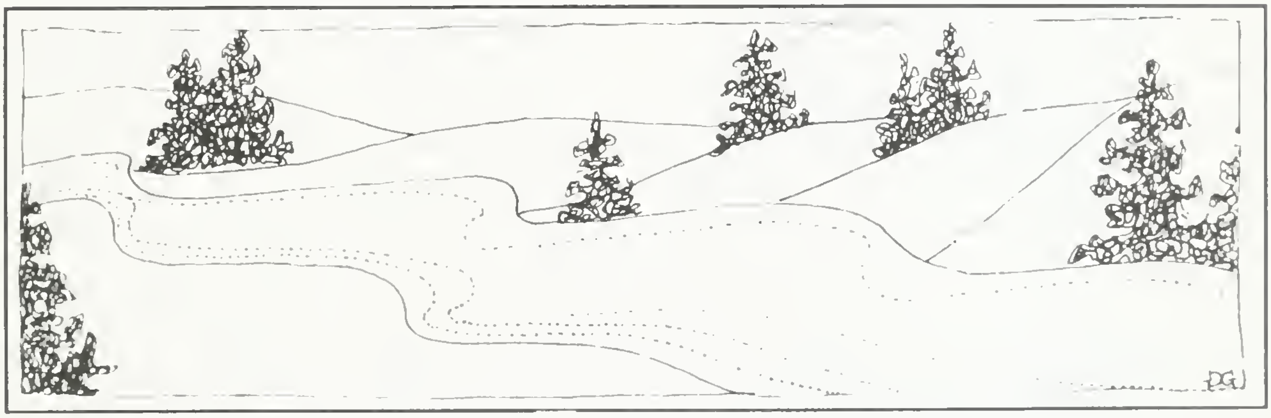
ice

salt

aluminum pan

something to crush the ice

magnifying glass



What to do

1. Crush some ice.

2. Pour salt between layers of crushed ice.

3. Place the ice-salt mixture into an aluminum pan. Let stand for awhile.

4. Observe, with the magnifying glass, the snow on the outside of the pan.

What happens

The air that comes close to the pan containing the ice-salt mixture gets cold and chills rapidly. The water in the air changes from water vapour (a gas) to ice crystals, or snow. You can feel the ice or snow crumble in your hands. What's left? The ice has turned back into water.

Measuring -- Creating a *Wind Current*

Materials you will need

stick
string
paper
scissors
hot plate

What to do

1. Cut a spiral ribbon out of a sheet of paper.

2. Suspend the paper spiral over a hot plate, using the string and stick.

What happens

The air above the hot plate is warmed. Cold air is heavier than warm air. So the cold air beyond the hot plate sinks and moves into the area of the hot plate. And the warm air above the hot plate rises and produces an updraught. This turns the spiral -- wind. Place your hand above the spiral and you can feel the wind.

But what are some of the problems with our air today?

Air pollution

Remember we said we can't see air? Unfortunately, we can see some types of air pollution. On a windy day, dirty air is moved and spread out across the land and water. When sunlight and dirty air mix, it can cause smog -- that we can see as a low haze over a city. This low-level smog is sometimes called ozone. (Don't confuse it with the ozone LAYER that is a very important and helpful part of our atmosphere.)

But what really is air pollution? We know that air carries oxygen, nitrogen and carbon dioxide but it can also carry other gases or dust particles that are harmful. These contaminants may harm our health and environment.

What causes this dirty air? A variety of natural phenomena, such as forest fires, earthquakes and volcanic eruptions, do contribute to air pollution. However, sources such as smoke-stack emissions from manufacturing plants increase the pollution.

Acid dust is part of air pollution. We know that acid rain is formed when two gases, sulphur dioxide and nitrogen oxide, mix with moisture and air. But nitrogen and sulphur oxides don't just come in rain. Dust particles are carried by wind and this acid dust kills plant life, lakes and forests. People who have lung disorders, such as asthma, also suffer when they breathe in this acid dust.

Nitrogen oxide can destroy large forests by damaging the leaves on trees and their roots that grow in soil. Damaged leaves need more food to stay alive. Without healthy soil, the roots can't get food to the leaves, and the tree dies.

Every time we use the car brakes, particles of rubber from the tires and asbestos from brake linings go into the air. That's air pollution too! Air conditioners and furnaces also contribute to pollution. Chemicals used to heat and cool air go into the atmosphere and are very difficult to break down.

Weather conditions also play a key role in determining why air pollution poses a health hazard on some days and not on others. This is because:

- wind speed affects the movement of pollutants in the air;
- clean rainfall is like a bath for the atmosphere and can cleanse the air;
- humidity -- the amount of moisture in the air -- has a bearing on how pollutants affect buildings, vegetation and human health;
- sunshine can combine with air pollutants, causing smog; and
- temperature affects the amount of fuel burned in our homes, schools and offices.

Air pollution not only hurts living things, but materials such as metal, stone, brick and paint also wear down and need to be repaired. Even our clothing is affected by pollution -- that may mean more cleaning! So air pollution costs all of us money as well as clean air.

The ozone layer is very high up in the atmosphere. This layer protects us from too much sunlight. However, a group of chemicals called chloroflurocarbons (CFCs) is destroying the ozone layer. Scientists have found large holes in this layer above Antarctica and Baffin Island in the Arctic. As a result, the manufacturing and the sale of aerosol and foam packaging made with CFCs have been banned, in Ontario, since July, 1989.

Our governments are also very concerned about the effects of air pollution on our natural and urban communities. There is a now a new system, developed by Environment Ontario, for monitoring the amount of air pollution. It's called an 'air quality index' or AQI for short. The cleanest air has an AQI of 0-15. But, if the index reads 100, watch out! Being outside when the AQI is 100 is like standing behind a bus all day! You need a very complex machine to measure AQI. In fact, the AQI is measured every hour in 26 different Ontario cities! The machines measure the amount of carbon monoxide, nitrogen dioxide, ozone smog, sulphur dioxide and suspended particles, as well as total reduced sulphur, which refers to sulphur-containing compounds that cause unpleasant odours.

The government also helps control air pollution by limiting industrial air pollution. For example, the government has regulations for:

- reducing stack emissions;
- using pollution control devices on stacks;
- burning fuels that are low in sulphur content.

The government also alerts companies to weather conditions that tend to increase air pollution, so that the companies can temporarily stop or reduce air emissions.

But what can we do to prevent air pollution?

We can be careful using our cars -- maintaining a steady speed instead of rapidly accelerating and slowing down, saves fuel and cuts down on the vehicle emissions. We can walk, ride a bike, or take public transit. In any case, we cannot always count on our parents to take us where we want to go!

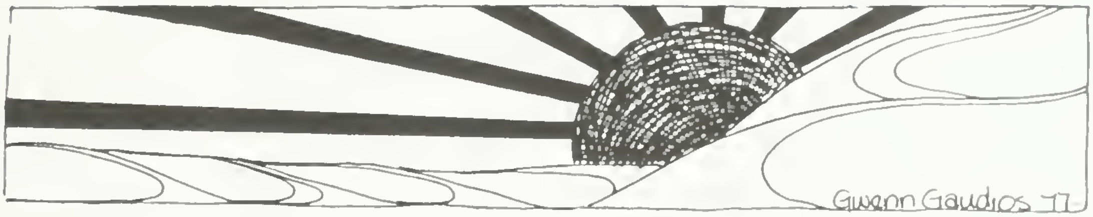
One other thing we can all do to help our air is not smoke. When we smoke, we pollute the air inside our bodies as well as the air around everyone else!

Our Planet

Our water, our air, the animals, birds, insects and plants are all part of our marvellous planet. Unfortunately, as we've seen from some of the problems facing our planet, we seem to have taken it for granted -- for far too long.

For most of the time people have lived on our planet, there weren't that many of us. Nature and the Earth's resources, like trees and fresh water, seemed endless. And our planet seemed to absorb whatever waste we created without grumbling.

But things have changed now. There are more than five billion people on our planet plus all the various machines and tools we've invented. And some of these machines are contributing to the destruction of our precious natural community. And we're destroying our urban communities. Let's look at our cities and towns, the problems we're creating for ourselves and the other living creatures with whom we share this planet. And finally, let's look at some of the things we can do to clean up the mess we're making. Think of our planet as a ship sailing a sea called the universe -- we're all in this together!



Our Urban Community

We've looked at the natural environment and how we play a very big part in protecting or damaging that wondrous community. The same is true for our urban communities. Although some of us do live in the country with a rural route address, most people in Ontario live in towns or cities. Let's explore some of the problems facing our towns and cities and some of the choices we have to help clean up and protect our environment.

In cities and towns we've got the problems of smog, acid rain, and air and water pollution that the natural community has. But we've got other big problems -- global warming, oil spills and garbage.

The Greenhouse Effect and Global warming

The greenhouse effect is often confused with global warming. While the two are closely related, they are not the same thing.

The greenhouse effect is the natural process that heats the earth's surface. The earth's atmosphere acts like the glass in a greenhouse. Heat from the sun is trapped next to the earth by gases in the atmosphere. These are called greenhouse gases. The greenhouse effect allows some heat to radiate back into space but traps enough to keep the earth warm.

Global warming is believed to be the result of human activities, such as driving cars and running factories. Many scientists believe that greenhouse gases from these sources add to the natural amount already in the atmosphere. As a result, more heat may be trapped next to the earth, causing it gradually to get warmer.

Oil spills

Transporting fossil fuels can be a problem if a pipeline ruptures or an oil tanker sinks producing oil spills. Recent spills off the coasts of Alaska, Texas and Kuwait are examples of serious and dangerous spills.

Garbage

Now nature has garbage too but it is able to take care of most of that type of debris. Think about your walk in the woods. What happens to all the trees that fall and leaves that drop? What about the animals and insects and plants that die? Where do they go? Well, nature has a magnificent way of using that dead material. The trees or plants decay -- tiny bacteria or moulds break down the material into smaller pieces and these become food for other animals or fertilizer for the earth. This is nature's way of recycling its garbage. But nature's garbage was once alive.

People have different problems. We have garbage from things that weren't alive so the earth can't absorb and reuse them. Since most of us live in towns or cities, that means a lot of people live very close together -- and that means we have to get rid of a lot of garbage every day. In Ontario, burning garbage (incineration) in apartment buildings has been banned since May 31, 1989, to reduce air pollution. Add to that the fact we make things out of glass, brick, stone, clay or plastic. These things weren't alive. Traditionally, we've dug big holes and dumped all our garbage into these landfill sites. But we know now that this causes even MORE problems. For example:

- chemicals and toxins from these landfill sites can leak into adjoining farmland making it unusable;

- chemicals can 'leach' into nearby lakes or ponds, contaminating them so fish can't live in the water, animals can't drink the water and we can't drink or swim in the water;and

What a fix we've got ourselves into! But there are things we can do.

The Three Rs

Have you heard of the three Rs? The letters stand for **REDUCE, REUSE** and **RECYCLE**.

The first "R" is simply to **REDUCE** the quantity of garbage you generate. When you shop with Mom and Dad, bring your own bag to carry the groceries. Avoid the purchase of disposable and over-packaged goods.

The next "R" is **REUSE** or using an item again. For example, bring your old plastic bags to the supermarket. Buy your pop in refillable bottles.

The third "R" is **RECYCLE**. By recycling, you can be a garbage transformer. The section "What to Do" on page 56 will give you more information on what can be recycled.

By making a home composter, you or your group can turn raked up leaves and left-over vegetable and fruit peelings into something good for the garden. If you meet at a church you might ask permission to make a composter for the church garden.

Using your senses of sight and touch

Making your own composter

Materials you will need

a big plastic garbage can with a lid (one for outside)

a long stick for stirring the compost

soil

goodies for the compost

What to do

1. Poke 20 or 30 holes in the lid, sides and bottom of the garbage can. The holes let the air in and let excess water out.

2. Put some garden soil in the bottom of the garbage can. Now add some compost ingredients -- vegetable or fruit peelings or coffee grounds. Never put any meat or bones in the pail because they will attract flies and rats. When you are starting your compost, put in equal amounts of vegetable garbage and soil.

3. Add some decaying leaves and grass clippings.

4. Add some soil-stirring animals, such as earthworms and sow bugs.

5. Stir the compost with the stick. Compost should be damp but not soaking wet. Sprinkle a little water on if it is too dry. Add dry soil if the compost mix is too wet.

6. Add more vegetable garbage every time you have some. Each time, add a little soil to go with it. Stir the mixture every 2 or 3 days.

7. When the can is about 3/4 full, stop adding garbage and let it sit for 3 to 6 weeks. By that time you should have crumbling, rich compost for your garden. If it's still a bit lumpy, you can strain it through an old window screen when you put it on the garden.

Plant a garbage garden

Another project would be to plant a garbage garden. Again, you will have to ask permission to do this. This activity shows you what happens to things that were once alive and things that were never alive when they are buried -- like in a garbage dump!

What you will need

Choose some of these things to plant in your garden:
a piece of pure cotton cloth (perhaps from an old tea towel or T-shirt)
different kinds of paper -- a square of toilet paper, a piece of writing paper, a piece of newspaper, a piece of shiny magazine paper
a styrofoam cup
a piece of aluminum foil
an apple or pear core or banana peel
a plastic sandwich bag or piece of plastic wrap
a piece of wool cloth

You will also need

a garden trowel

a watering can or hose

popsicle sticks (that you've saved when you had popsicles!)

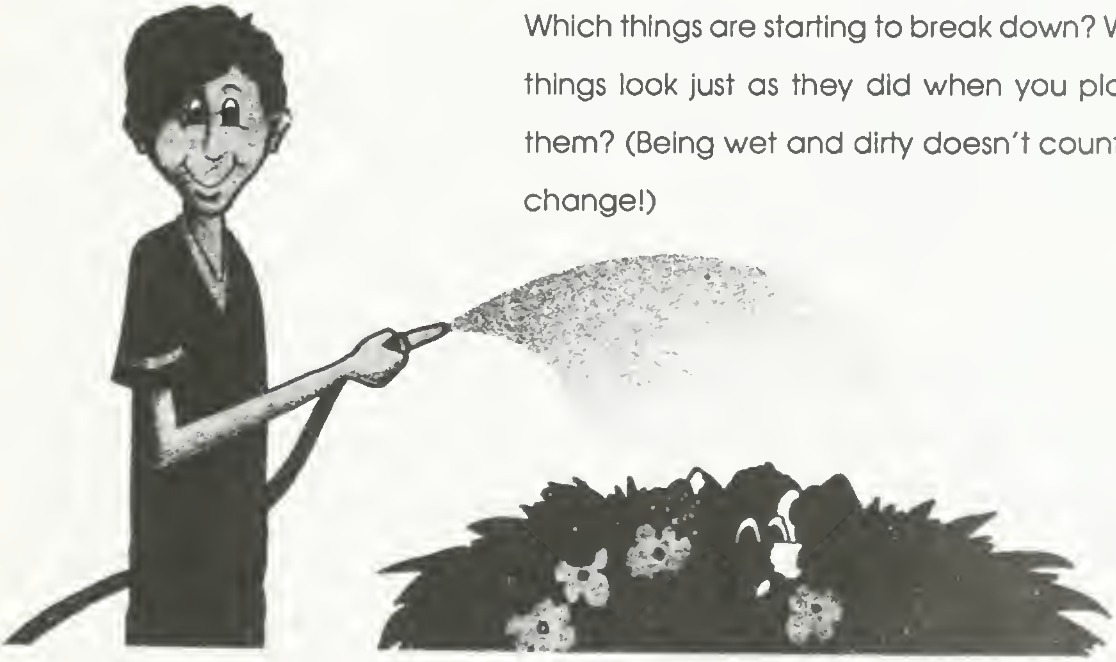
a patch of garden or a large plant box

What to do

1. Dig holes about 10 cm deep. Dig one hole for each thing you're planting.

2. Put a little water into each hole. Put a garbage plant in each hole. Cover with earth. Put a popsicle stick at each spot so you'll know where the things are.

3. Water your garden every day for about a month. Then dig the things up again. How do they look? Which things are starting to break down? Which things look just as they did when you planted them? (Being wet and dirty doesn't count as a change!)



Recycling things you can collect as a group include aluminum cans, glass bottles, plastic bottles and jugs, and old newspapers. Most communities have some type of recycling program. Find out what your community is doing and perhaps your group could collect items for the program.

Aluminum cans

Recycle an aluminum can and it will be transformed into another can. First it is shredded, cleaned up and melted down. Then it's rolled into a huge sheet from which new aluminum cans are made. Recycling aluminum uses only about 10 per cent of the energy it takes to extract new aluminum from the earth.

Plastic bottles and jugs

PET (polyethylene terephthalate!) plastic bottles can be recycled and ground into flakes that can then be made into pellets to fill parkas and sleeping bags or melted and molded into new plastic shapes such as park benches.

Glass bottles

Before glass bottles can be transformed they have to be turned into cullet -- or smashed up glass! Glass manufacturers mix cullet with sand, limestone and soda ash and melt the mixture in a superhot furnace (about 1 100ºC!). When this mixture reaches that hot, hot temperature, it can be shaped and blown into new glass.

Newspapers

Used paper is sent to a mill where it is mixed with water and cleaned with special soaps. Then the ink and chemicals are removed. The cleaned-up, de-inked pulp is mixed with new pulp. Then it is rolled into paper that can be made into boxes, cartons, newspapers or booklets like this one!

Tin

When you put a tin can into a blue box or take it to a recycling depot, it gets separated into two parts -- tin and steel. The tin is ground into a chemical powder and used to cover car parts. The steel can be transformed into hammers, drills and even the steel skeletons that hold up skyscrapers!

There are other good things about recycling besides making the best use of our materials. Recycling means there's less garbage to fill up landfill sites. Forests and other natural resources are conserved. And because recycled objects take less energy to make, factories create less air and water pollution. Your group could make a difference by tackling a recycling project!

Other things you can do to help our environment

Hopefully, by now your group will have decided to tackle some sort of environmental project such as recycling. But what if your group meets only once a week or once a month? Can you still be involved the rest of the time? Of course! You can apply what you know and what you've learned about caring for our environment every day -- at home and at school and when you're on vacation. Here are a few suggestions of what you and your group can do to help our environment. See if your group members have any other ideas. Obviously, not all these activities are possible for all members of your group but perhaps you can talk about ways to modify activities. For example, someone with a mobility disability, may not be able to cart bundles of old newspapers but they could be in charge of organizing crews or tallying the number of bundles. It's the ability, not the disability that counts!

At Home

- Conserve water, don't waste it. When brushing your teeth, turn the water off while you are actually brushing, instead of running it continuously. Use water from a mug for rinsing. This saves about 80 per cent of the water!

- Be sure always to turn taps off tightly so they do not drip. Check all the taps in your house regularly for leaks.

- Learn to cook! Homemade cookies and cakes are fun to make and decorate, taste good, and don't need the preservatives or packaging that store-bought ones do.

- You can start your own compost pile at home, too. If you can't have one at home, perhaps a neighbour has one and might appreciate your contributions.

- Start a garden, either indoors or outdoors, and grow your vegetables organically -- using natural gardening methods such as rotating crops, and using homemade compost instead of chemical fertilizers.

- Instead of using sprays to control insects in your outdoor garden, put bird feeders and bird houses in the yard to attract insect-eating birds.

- Donate your used toys to needy groups or to day-care centres, or sell them at a yard sale. You could have your own or get a group of friends together and hold a joint sale.

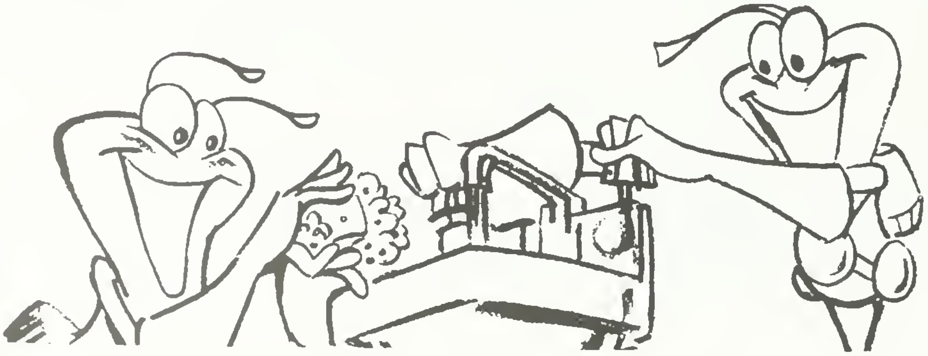
- If you have outgrown your clothes and they're still in good condition, why not think of some smaller children who might be able to use them. Or you could give them to neighbourhood services stores to be used by other people.

- Give your used books and magazines to libraries, playgroups, day-care centres, or your doctor's or dentist's office.

- When possible, buy beverages in returnable bottles rather than non-returnable plastic containers or cans, and then make sure you return the bottles and collect your refund.

- If you take your lunch to school, make sure to bring home any plastic bags or wrappings to rinse off and use again.

- If your area has a recycling program for newspapers, glass or cans, be sure to use it.
- Take the bus or ride your bicycle more often than you ask dad or mom for a ride to wherever you're going.
- Clean up after your dog when you go for walks.
- It's best to leave young, wild animals and birds alone. They sometimes appear to be abandoned by their mothers, but in most cases, they have not been.
- If you're in charge of cleaning up after dinner, remember to run the dishwasher only when it is full. And be sure to use the energy saver or shortest cycle possible.
- Let dishes air dry instead of using the drying cycle on the dishwasher.
- Why not do the dishes by hand if you have only a few?
- Short showers use less water than baths; but if you still prefer bathing, avoid overfilling the tub -- one-quarter full should be enough.



- Never flush garbage of any kind down your toilet. Household cleaners, paint, solvents, pesticides and other chemicals are very harmful to the environment. And other things like paper tissues or dental floss can create problems at sewage treatment plants.

- If you're in charge of doing the laundry, remember to wash only full loads in the washing machine. If the machine has an adjustable water-level indicator, set the dial to use only as much water as is really necessary.

- Use the shortest cycle possible for washing your clothes. Use cool water rather than hot, and use the suds-saver feature if your machine has it.

- To save energy remember to turn off lights, the TV, the VCR, the Nintendo, the stereo and radio when you're not using them.

- Besides keeping your yard free of litter, you can plant trees. One tree can absorb as much as 21 kilograms of harmful carbon dioxide a year -- and trees provide homes for birds and small animals and they look nice!

At School

Is your school a STAR school? Environment Ontario developed the Student Action for Recycling (STAR) program to help schools across the province get into recycling.

What is STAR?

STAR encourages school boards to set up recycling programs by offering some funding, technical support and promotional material from Environment Ontario. Schools can play a big part in recycling by collecting newspapers, glass bottles and metal cans.

If your school isn't a STAR school, ask your teacher or principal about the program. For more information on becoming a STAR school, they can contact:

Public Information Centre
Environment Ontario
135 St. Clair West
Toronto, Ontario
M4V 1P5
(416) 323-4321

In the meantime you can still be active at school.

- Take your lunch in reusable containers. You don't have to wrap your sandwich in paper, it will stay fresh in a plastic sealed dish. Take a thermos with juice instead of a drinking box.

- Participate actively in environmental fairs, in government environment department tours, and in poster, essay, song or play contests about the environment.

- Organize or participate in neighbourhood clean-up campaigns. Your class could conduct a sweep of the immediate neighbourhood collecting old newspapers, for example.

- Organize special paper, glass or metal recycling projects. They can also serve as fund-raisers for your school.

- Sign up for environmental projects for the annual science fairs held in your area.

- Encourage your teacher to organize special activities or projects during Canadian Environment Week (usually the first week in June).

At Vacation Time

Practise your environmental 'smarts' on your next vacation. Treat your campsite, trailer park, or cottage as your home. Ask your family if you can visit a provincial or national park during your vacation. Remember to never litter or contaminate the beach, the water, or your campsite.

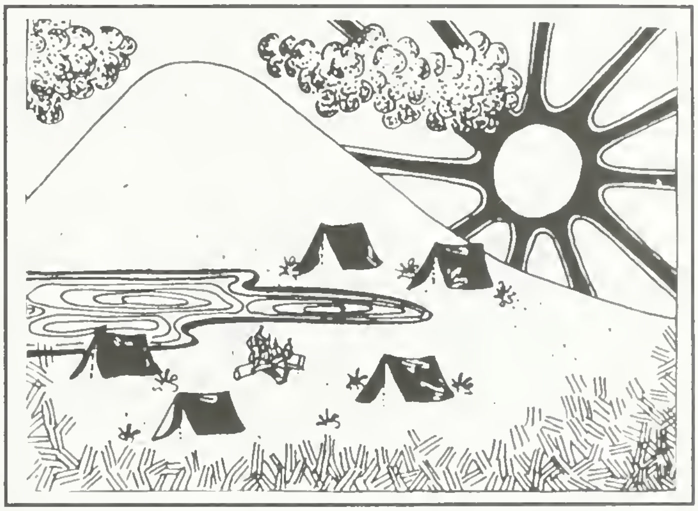
Boating

- Never throw garbage of any kind overboard. Take it back to shore with you and dispose of it properly.
- Watch your wake, especially if you're within 150 metres of the shore. Waves cause shoreline erosion and can also disrupt wildlife habitat.
- Avoid the temptation to top off your gas tank when refuelling, because doing so often results in small toxic spills.
- Always dispose of waste oil in special oil recycling tanks available at most marinas and government docks. One litre of oil can contaminate up to 2 million litres of water.
- Why not go sailing, canoeing or kayaking instead of power-boating? That's using people power instead of motor power.

Camping

- Use existing campsites. Don't cut new trails or try to improve a site by pulling out vegetation or trees.

- Carry out everything that you brought into the wilderness.



- Wash your dirty dishes, clothes and even yourself in a dish pan and not in a lake, stream or river. Then throw the dirty water some distance away from the sources.

- Avoid disturbing wildlife, particularly young animals or nesting birds. Remember, you're the guest in their home.

- Be sure to guard your food and garbage carefully from wildlife. Also, never feed wildlife, as this interferes with their natural habits.

- If you find injured or dead birds with bands on their legs, contact the Canadian Wildlife Service or the Environment Ontario office.

- It's a good idea to find out which wildlife and plant species are on the endangered list in your camping destination. Remember, don't pick the endangered flowers and don't pick any if you're just going to throw them away.

At the cottage

- Make sure you bring back all your recyclables from your cottage garbage if you have a recycling program at home.

- If your cottage is located on or near a bank or shore, preserve as much as possible of the natural vegetation between the cottage and the water to reduce rainfall runoff that may carry harmful sewage organisms. Plant new shrubs and trees if need be.

- Preserve local wildlife by avoiding chasing birds with power boats, disturbing bird nesting areas, filling in wetlands or altering shorelines, or allowing your dog to run at large.

- Never ride all-terrain vehicles or trail bikes along beaches, through marshes or in other areas where birds nest and breed.

- If you come across polluted areas needing a clean-up or if you see polluters in action, report them to the nearest Environment Ontario office as soon as possible.

Special thanks to Environment Canada for the use of illustrations found in the following publications:

Access Series booklets	- *"Design and Parks Programs"* - *"Disability Awareness and Sensitivity Training"*
Information brochures	- *"Access For All"* - *"What We Can Do For Our Environment"*